

Patent claims

1. An apparatus for detecting the material on the surface of flat objects on a stack, in particular of objects individually separated from one another in the stack by interlayers, preferably of printing plates, characterized by
a sensor apparatus comprising a sensor carrier (30), sensor electronics (33) and sensor electrodes (31, 32), which rest on the surface of the flat object and which conduct a measuring current (47) through the surface of the flat object.
2. The apparatus as claimed in claim 1, characterized in that the electrical resistance in the surface of the flat object is measured with the measuring current (47).
3. The apparatus as claimed in claim 1 or 2, characterized in that the sensor electronics (33) contain a frequency generator (40), a rectifier (41), a measurement amplifier (42), comparators (43, 44) and an evaluation unit (46).
4. The apparatus as claimed in claim 1 or 2, characterized in that the sensor electronics (33) contain a controllable-frequency frequency generator (50), a rectifier (41), a measurement amplifier (42), an analog-digital converter (51) and a control and evaluation unit (52).
5. The apparatus as claimed in claim 3 or 4, characterized in that the sensor electronics (33) additionally contain a short-circuit detector (45).
6. The apparatus as claimed in one of the preceding claims, characterized in that the sensor apparatus detects the surface

types comprising paper, exposure layer of a printing plate, metal or 'no object'.

7. The apparatus as claimed in one of the preceding claims, characterized in that the sensor apparatus is integrated into a loading device for printing plates.

8. The apparatus as claimed in claim 7, characterized in that the sensor apparatus is integrated into a lifting device (3) having suction elements (4) for printing plates.

9. A method of detecting the material on the surface of flat objects on a stack, in particular of objects individually separated from one another in the stack by interlayers, preferably of printing plates, characterized in that by using sensor electrodes (31, 32) which rest on the surface of the flat object and which are connected to sensor electronics (33), a measuring current (47) is conducted through the surface of the flat object.

10. The method as claimed in claim 9, characterized in that the measuring current (47) is generated by a frequency generator (40), which applies a high-frequency voltage to the sensor electrodes (31, 32).

11. The method as claimed in claim 9 or 10, characterized in that, by using the measuring current (47), the electrical resistance in the surface of the flat object is measured.

12. The method as claimed in one of the preceding claims, characterized in that the measuring current (47) is converted into a measuring voltage (48), and the material of the surface

is recognized by the voltage range in which the measuring voltage (48) lies.

13. The method as claimed in one of the preceding claims, characterized in that the frequency of the measuring current (47) is varied by a controllable frequency generator (50) and a plurality of measurements are carried out at different frequencies.

14. The method as claimed in claim 13, characterized in that the measuring voltages (48) of a plurality of measurements are evaluated to detect the material of the surface.

15. The method as claimed in one of the preceding claims, characterized in that the surface types comprising paper, exposure layer of a printing plate, metal or 'no object' are detected.